

CLAIMS

1. A data transfer apparatus for controlling the provision of data to a data processor where the data comprises at least two data items having a predetermined temporal relationship, the apparatus characterised by:
 - a first buffer for receiving data from sources of data and including markers to indicate that a data item associated with the marker has been modified;
 - and a data flow controller responsive to the markers and to a data association instruction specifying the data items which have a temporal relationship such that the data flow controller only allows a group of data items having a predetermined temporal relationship to be read from the first buffer when the items in the group satisfy the predetermined temporal relationship.
2. A data transfer apparatus as claimed in claim 1, further comprising a second buffer, and wherein a data item is transferred from the first buffer to the second buffer only when the data item satisfies any temporal constraints associated with it.
3. A data transfer apparatus as claimed in claim 2, in which the second buffer includes markers to indicate when a data item associated with the marker is modified.
4. A data transfer apparatus as claimed in claim 1, in which the markers of the first buffer are set when an associated data item is written to the buffer and cleared when the associated data item is read from the first buffer.
5. A data transfer apparatus as claimed in claim 3, in which the markers of the second buffer are set when an associated data item is written to the second buffer and cleared when the associated data is read from the second buffer.
6. A data transfer apparatus as claimed in claim 1, in which specific data items have predetermined places reserved within the first buffer.
7. A data transfer apparatus as claimed in claim 2, in which specific data items have predetermined places within the second buffer.

8. A data flow controller as claimed in claim 6, in which the data items which are temporally associated with each other form a group of data items, and data items which form a group have contiguous positions within the first buffer.
9. A data transfer apparatus as claimed in claim 2 in which the transfer of a group of temporally related items from the first buffer to the second buffer is inhibited if only some of the corresponding items in the second buffer have been read by a sink process.
10. A data transfer apparatus as claimed in claim 2, in which the first buffer is N items deep and has N markers, the second buffer is M items deep and has M markers, and N equals M .
11. A method of controlling the provision of data to a data processor wherein the data comprises a plurality of data items, at least two of which have a temporal relationship, the method comprising the steps of:
 - a. Storing the data in a first storage area and updating a marker associated with an item of data each time that item of data is modified; and
 - b. Comparing the status of the markers with a data association instruction specifying which items of data have a temporal relationship to determine a group of temporally related data items, and only allowing those data items in the group to be read from the first storage area when all the items in the group satisfy the temporal relationship.
12. A method as claimed in claim 11, wherein an item of data is transferred to a second storage area when the item of data satisfies any temporal constraints associated with it.
13. A method as claimed in claim 12, wherein the items of data in the second storage area are associated with markers.
14. A method as claimed in claim 11, wherein the markers are set when an associated item of data is written to and reset when the associated item of data is read.